



Teaching Tree Management Programs to Several Cities in Miami–Dade County, a Successful Partnership between IFAS/Extension and the Florida Forest Service

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The last US Census shows that there are 35 cities and municipalities in Miami–Dade County. The average tree canopy in the county is very low (11%). Trees make up 8% and palms make up 3%. As a consequence of budget constraints during the last year, many ground maintenance employees from cities and municipalities cannot attend programs offered by the Extension Service on tree management or other topics. In order to effectively train those cities, the Florida Forest Service Senior Forester, Everglades District and the Miami–Dade County Urban Commercial Horticulture Extension Agent designed and implemented an on-site training on tree management. The training consists of a three-hour program and covers tree biology, anatomy, planting, pruning, and root manipulation. The format of the class is two hour presentations and one hour demonstrations outside the classroom on diverse topics using wood samples and actual trees. To date, 55 ground maintenance employees from the cities of Sweetwater, Miami Lakes, and Biscayne Park have received the training. In the future the cities of Doral, North Miami, and Miami Shores will receive the training. The comments about the program were all positive. Participants highlighted the importance of this training because they were able to interact one-on-one with each other due to the small size of the groups. The Florida Forest Service is a key player in this partnership because of their role in the Florida Urban and Community Forestry Grant Program, which requires that awardees implement an effective tree management plan in their community.

Miami–Dade County is the most populous county in Florida. According to the 2010 US Census, there are 35 cities and municipalities in the county. It encompasses more than 2,000 square miles (larger than the state of Rhode Island) and is limited on the west and east by two of the most unique and very fragile ecosystems: Everglades National Park and Biscayne Bay National Park.

The urban forest structure and composition is composed of a relatively diverse number of species. There are an estimated 36 million trees in Miami–Dade. The 10 most common species account for 54% of all trees. The three most common species in the County are Benjamin fig (*Ficus benjamina*), red mangrove (*Rhizophora mangle*), and Christmas palm (*Veitchia merrillii*), at 10.1%, 8.8%, and 8% of the total tree population, respectively (Escobedo et al., 2011).

Adoption of good arboricultural practices will improve the quality of the urban forest, conserve other natural resources, as well as save time and money for the landscape industry. An increase in the number of street trees would make at least some municipalities eligible for designation as a Tree City. This in turn would help improve the quality of life for the residents, lower energy costs, help trees live longer and be more structurally stable. Also, proper tree management will also help mitigate potential storm damage and will help the county reach 25% of tree canopy by the year 2020 in accordance with Miami–Dade's Street Tree Master Plan (Miami–Dade Street Tree Master Plan, 2007).

While the County is geographically located in the subtropics,

many areas do not reflect the lush vegetation often associated with this type of climate. Some of the sparsely vegetated areas were planted with coconut palms prior to lethal yellowing in the 1970s. Other areas have received only token landscape maintenance efforts. Canopy losses caused by recent hurricanes and other natural disasters have not been restored. The tree canopy has been further reduced by the discovery of citrus canker (*Xanthomonas citri* subsp. *citri*) starting in the area around Miami International Airport and the eradication program that removed nearly 200,000 citrus trees in Miami–Dade County alone (Department of Environmental Resources Management, 2001). Also, the lobate lac scale [*Paratachardina lobata lobata* (Chamberlin) (Hemiptera: Sternorrhyncha: Coccoidea: Kerriidae)], ficus whitefly [*Singhiella simplex* (Singh) (Hemiptera: Aleyrodidae)], and lately, rugose spiraling whitefly [*Aleurodicus rugioperculatus* (Martin) (Hemiptera: Aleyrodidae)], have added to the decline of the canopy. Attempts to restore the tree canopy at landscaping commercial sites have been made; however, many managers reflect a lack of knowledge of appropriate planting material and practices for these sites. Inappropriate choices of landscape material appear in the form of tall trees planted under utility lines, tree species used as shrubs, high maintenance plants in median strips, and other horticultural errors. These in turn lead to improper maintenance activities such as yearly hat-racking, over lifting, median plantings with plants that require intensive maintenance, and other inappropriate practices. Within the County there are approximately 1,200 commercial tree trimming companies. Only 167 are ISA (International Society of Arboriculture) Certified Arborists, which is very low (one for every 15,000 County residents) compared to

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1,846 certified arborist statewide (one per 9,500 residents) (Source: ISA Florida Chapter executive director personal communication). For all those factors the average tree canopy in the County is very low, 11% (8% is from trees and 3% from palms), whereas the average for American cities is 25%–33% (Escobedo et al., 2011).

During the last years, due to budget constraints and low job force, many ground maintenance employees from cities and municipalities cannot attend programs on tree management offered by the Extension Service. For that reason the Florida Forest Service Senior Forester, Everglades District and the Miami–Dade County Urban Commercial Horticulture Extension Agent designed and implemented an on-site training on tree management. The training consists of a 3 hour program and covers tree biology, anatomy, planting, pruning, and root manipulation. The format of the class is 2 hour presentations and one hour demonstrations outside the classroom on diverse topics using wood samples and actual trees.

The target audiences for the program are city parks and public works employees who deal with the urban tree canopy. As of today 100 ground maintenance employees from the cities of Sweetwater, Miami Lakes, Biscayne Park, Doral, North Miami, and Miami Shores have received the training. The comments of the program were all positive. Post evaluation results after the class showed: to the question, how you like the class (1 = very dissatisfied and 5 = very satisfied) participants' scores ranged from 4.0 to 4.8; to the question, did you learn new things about tree management (1 = nothing and 5 = a lot) participants' scores

were 3.1–4.0; and to the question, will you change anything as of result of the class (1 = no change; 5 = a lot) participants scored 2.5–4.0. Participants highlighted the importance of this training because they were able to interact one-on-one with each other due to the small size of the groups. The Florida Forest Service is a key player in this partnership due to its active role in the Florida Urban and Community Forestry Grant Program. The program requires that the awardees implement an effective tree management plan in their community. Another follow-up survey will be conducted six months and one year after the end of the program.

In conclusion, this is a very successful partnership with good results. In the future, other cities and municipalities will be added to the program. The goal is to train at least another five cities and conduct advanced classes in the future.

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